

# **Exhibit A**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS**

MARY LALIBERTE and MARIE  
MCKNIGHT, individually and as  
representatives of a class of similarly situated  
persons, on behalf of the QUANTA  
SERVICES, INC. 401(K) SAVINGS PLAN,

Plaintiffs,

v.

QUANTA SERVICES, INC.; THE BOARD  
OF TRUSTEES OF QUANTA SERVICES,  
INC.; THE QUANTA SERVICES, INC.  
401(K) SAVINGS PLAN COMMITTEE; and  
DOES No. 1-20, Whose Names Are Currently  
Unknown,

Defendants.

Case No: 4:22-cv-03290

EXPERT REPORT OF DR. ADAM WERNER

AUGUST 1, 2024

CONFIDENTIAL

**TABLE OF CONTENTS**

I. INTRODUCTION .....1

II. PROFESSIONAL BACKGROUND AND EXPERIENCE.....2

III. SUMMARY OF OPINIONS AND FINDINGS.....3

IV. METHODOLOGY AND CALCULATION OF LOSSES.....3

    A. Fidelity Freedom TDFs Loss Calculation.....4

    B. American Beacon and DFA .....6

V. CONCLUSION.....6

VI. LIMITING FACTORS AND OTHER ASSUMPTIONS.....7

I, Adam Werner, Ph.D., declare and state, under penalty of perjury, that the following is true and correct to the best of my knowledge, information, and belief. If called to testify, I could and would testify competently to the following facts.

## **I. INTRODUCTION**

1. I was asked by Miller Shah, LLP, counsel for the Plaintiffs in the above-captioned litigation against Quanta Services, Inc. (“Quanta” or “Defendant”), to apply a common damages methodology and provide an estimate of losses for the Quanta Services, Inc. 401(k) Savings Plan (the “Plan”) attributable to Class members who participated in the Plan at any time on or after September 26, 2016. Specifically, I was asked to provide an estimate of losses suffered by the Plan under the following assumptions:

- a. The retention of the Fidelity Freedom Funds Target-Date Suite (the “Fidelity Freedom TDFs”) in the Plan was imprudent as of the 4Q2016 (“4Q2016”) and the Plan’s fiduciaries should have replaced the Fidelity Freedom TDFs with the American Funds TDF R6 suite (the “American Funds TDFs”) as of 1Q2017;
- b. The retention of the American Beacon Small Cap Value Fund R6 Class (the “American Beacon Fund”) in the Plan was imprudent as of 4Q2019 and the Plan’s fiduciaries should have replaced the American Beacon Fund with the Janus Henderson Small Cap Value N as of 1Q2020;
- c. The retention of the DFA International Small Cap Value I (the “DFA Fund”) in the Plan was imprudent as of 4Q2019 and the Plan’s fiduciaries should have replaced the DFA with the Schwab Fundamental International Small Cap Equity Index Fund as of 1Q2020; and

d. That the terminal date for all loss calculations for purposes of this Expert Report should be June 30, 2024, or 2Q2024.<sup>1</sup>

2. I understand that as an expert witness in this proceeding, my duty in providing my Report is to the Court and that this duty overrides any obligation to the parties who have engaged me, from whom I have received instructions or compensation. I confirm that I have complied with this duty.

## **II. PROFESSIONAL BACKGROUND AND EXPERIENCE**

3. I am currently a managing director at SEDA Experts, LLC (“SEDA”) having previously served as a Lecturer in economics at the Orfalea College of Business at California Polytechnic State University San Luis Obispo (“Cal Poly”). At Cal Poly, I taught managerial economics to graduate students, and international finance, macroeconomics, and intermediate microeconomics to undergraduates. Prior to working at SEDA, I spent over 25 years working for consulting firms including Cornerstone Research, CRA International, and NERA. I have been retained by both plaintiffs and defendants to consult on matters pertaining to market efficiency, materiality and loss causation, damages, investment banking, financial valuation, security issuance, bankruptcy, and options backdating. My expert opinions have been accepted in Federal, State, and Bankruptcy courts within the United States as well as courts in Australia and Canada. I have also testified in arbitrations both inside and outside of the United States. I have lectured frequently to attorneys on the topic of damage estimation and settlements in securities class actions. I have also spoken on the estimation of capital rates in emerging economies at a conference organized by the University of Texas School of Law.

---

<sup>1</sup> June 30, 2024 reflects the last quarter-end for which data was available at the time of submitting this Expert Report (“Report”). I reserve the right to update the calculation of losses beyond June 30, 2024 based on subsequently available data should I be asked by Counsel or the Court and to include a calculation of prejudgment interest.

4. I hold a Ph.D. in Finance (1999) from Northwestern University's Kellogg Graduate School of Management ("Kellogg"). While at Kellogg, I taught M.B.A. classes in corporate finance, and futures and options. I was also awarded a University Scholarship during my time at Kellogg. Prior to graduate school, I served as a Research Assistant at the Federal Reserve Bank of Cleveland. My full *Curriculum Vitae* including prior testimony is attached as Exhibit-1 to this Report.

5. A list of documents I reviewed in forming my opinion in this matter is set forth in Exhibit-2 to this Report.

6. SEDA is currently being compensated at a rate of \$850 per hour for my ongoing work on this matter. Additional SEDA consultants have assisted me with my work at rates ranging from \$90 per hour to \$650 per hour. Neither my nor SEDA's compensation is not contingent on the outcome of this matter.

### **III. SUMMARY OF OPINIONS AND FINDINGS**

**OPINION 1: The Plan suffered losses of \$20,139,166 as of June 30, 2024, excluding prejudgment interest, as a result of Quanta's failure to replace the Fidelity Freedom TDFs with the American Funds TDFs as of 1Q2017.**

**OPINION 2: The Plan suffered no losses as of June 30, 2024 as a result of Quanta's failure to replace the American Beacon Fund with the Janus Henderson Small Cap Value N and Quanta's failure to replace the DFA Fund with the Schwab Fundamental International Small Cap Equity Index Fund as of 1Q2020.**

**OPINION 3: In aggregate, the Plan suffered losses of \$20,139,166 as of June 30, 2024, excluding prejudgment interest.**

### **IV. METHODOLOGY AND CALCULATION OF LOSSES**

7. I calculate losses resulting from Quanta's allegedly imprudent retention of the Fidelity Freedom TDFs based on the methodology outlined below.

**A. Fidelity Freedom TDFs Loss Calculation**

8. First, I calculate the quarterly cash flows in and out of each vintage of the Fidelity Freedom TDFs using quarterly balances of Quanta's investments for each vintage and the respective quarterly returns. From 1Q2017 to 2Q2024, Quanta invested (at various times) in the 2005, 2010, 2015, 2020, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, 2065, and retirement income vintages ("Fidelity Freedom TDF Vintages") of the Fidelity Freedom TDFs.

9. For data on the quarterly balances, I obtained from Counsel a set of documents produced by Defendants in this matter detailing the quarterly balances of the Plan's investments in each of the Fidelity Freedom TDF Vintages covering the quarters 4Q2015 through 1Q2024.<sup>2</sup> Notably, these documents were missing data for 2Q2024. My understanding is that Defendants did not produce quarterly balance data for this quarter. To remediate this missing data, I assume for purposes of this analysis that the last available quarterly balance data in 1Q2024 remained unchanged in 2Q2024.

10. I then obtained quarterly return data for each of the Fidelity Freedom TDF Vintages from the same set of documents from which I obtained quarterly balances. Similar to the quarterly balance data, the quarterly return data also ends in 1Q2024. For quarterly return data for 2Q2024

---

<sup>2</sup> See, [QUANTA\_100812-878]; [QUANTA\_120726-793]; [QUANTA\_00219-286]; [QUANTA\_002290-358]; [QUANTA\_002430-553]; [QUANTA\_002559-672]; [QUANTA\_002674-804]; [QUANTA\_002810-943]; [QUANTA\_002950-3071]; [QUANTA\_003084-197]; [QUANTA\_003367-478]; [QUANTA\_003585-695]; [QUANTA\_003725-819]; [QUANTA\_003960-4057]; [QUANTA\_004153-242]; [QUANTA\_004420-509]; [QUANTA\_004631-721]; [QUANTA\_004827-860]; [QUANTA\_005002-041]; [QUANTA\_005134-173]; [QUANTA\_005279-317]; [QUANTA\_005409-447]; [QUANTA\_005592-631]; [QUANTA\_005743-005787]; [QUANTA\_005960-6002]; [QUANTA\_006125-6168]; [QUANTA\_006297-337]; [QUANTA\_006452-493]; [QUANTA\_006606-648]; [QUANTA\_129016-067]; and [QUANTA\_128821-871].

I relied on data from Morningstar Direct, which is a widely used and generally accepted database for acquiring fund data.<sup>3</sup>

11. Using these quarterly balances and quarterly returns, I then calculated the quarterly cash inflows and outflows for each Fidelity Freedom TDF Vintage from 1Q2017 through 2Q2024. Exhibit-3 presents the quarterly balances for each vintage, Exhibit-4 presents the quarterly returns for each vintage, and Exhibit-5 presents the quarterly cash inflows and outflows for the Fidelity Freedom TDF Vintages.

12. Next, in order to calculate what Plan participants would have earned had Quanta replaced the Fidelity Freedom TDFs with the American Funds TDFs by 1Q2017, I obtained quarterly return data for the vintages of the American Funds TDFs matching that of the Fidelity Freedom TDF Vintages from Morningstar Direct. For example, for the Fidelity Freedom 2020 K vintage, I obtained data for the American Funds 2020 Target Date Retire R6 Vintage as the corresponding replacement returns. I obtained this data for all relevant vintages of the American Funds TDFs and for the quarters of 1Q2017 through 2Q2024.<sup>4</sup> Exhibit-6 presents the quarterly return data for the American Funds TDFs.

---

<sup>3</sup> The differences between the Morningstar Direct quarterly return data and the quarterly return data obtained from Quanta's documents is *de minimis*. The average difference was less than a single basis point (0.01%) across the Fidelity Freedom TDFs during the quarters where both data series were available. However, Morningstar Direct did not carry a quarterly return figure for the 2005 vintage of the Fidelity Freedom TDFs in 2Q2024. For purposes of the loss calculation, this quarterly return was assumed to be zero. I reserve the right to update the loss calculation for the actual quarterly return in the event this data becomes available.

<sup>4</sup> Since the series of American Funds TDFs does not have an "in retirement" vintage into which its dated vintages are combined after the assumed retirement date occurs, or a 2005 vintage, I used the American Funds 2010 Target Date Retirement R6 vintage as the comparable replacement vintage for both the Fidelity Freedom Income and 2005 vintages. In the event that the Freedom Funds were replaced in a retirement plan with the American Funds TDFs, all assets in the Income and 2005 vintages would be automatically mapped into the most conservative available vintage, *i.e.*, the American Funds 2010 vintage. Similarly, because the American Funds TDFs did not introduce its 2065 vintage until 2Q2020, my analysis utilized the American Funds 2060 vintage as the replacement for the Fidelity Freedom 2065 vintage from 4Q2019 (when Quanta added the Fidelity Freedom 2065 vintage) through 1Q2020 (the quarter prior to the introduction of the American Funds 2065 vintage), as this would be the actual mapping protocol in the event of a transition from the Freedom Funds to the American Funds TDFs.



13. Using this replacement fund data, I calculate the terminal Plan balance assuming replacement of each Fidelity Freedom TDF Vintage by the corresponding American Funds TDFs vintages using the beginning balance of Quanta's investments in the Fidelity Freedom TDFs as of 4Q2016, the computed cash inflows and outflows of the Fidelity Freedom TDFs from 1Q2017 through 2Q2024, and the quarterly returns of the replacement American Funds TDF Vintages from 1Q2017 through 2Q2024. Exhibit-7 presents quarterly balance calculations assuming replacement of the Fidelity Freedom TDFs with the American Funds TDFs as of 1Q2017.

14. Finally, I calculate losses suffered as the difference between the terminal value of the Fidelity Freedom TDFs and the American Funds TDFs as of June 30, 2024 (or 2Q2024). Exhibit-8 presents the difference in quarterly balances between Fidelity Freedom TDFs and the American Funds TDFs and the loss calculation as of June 30, 2024.

15. Using the above methodology and assuming that Quanta should have replaced the Fidelity Freedom TDFs with the American Funds TDFs as of 1Q2017, losses suffered by Plan participants amount to \$20,139,166 as of June 30, 2024, excluding prejudgment interest.

#### **B. American Beacon and DFA**

16. I repeated the above methodological process for both the American Beacon Fund and the DFA Fund but with inputs specific to these funds. As of June 30, 2024, there were no losses attributable to Plan participants as a result of Quanta's failure to replace the American Beacon Fund and DFA Fund with the Janus Henderson Small Cap Value N and Schwab Fundamental International Small Cap Equity, respectively, by 1Q2020.

#### **V. CONCLUSION**

17. Assuming that Quanta should have replaced the Fidelity Freedom TDFs with the American Fund TDFs as of 1Q2017, the American Beacon Fund with the Janus Henderson Small Cap Value N as of 1Q2020, and the DFA Fund with the Schwab Fundamental International Small

Cap Equity Index as of 1Q2020, the Plan's aggregate losses amount to \$20,139,166 as of June 30, 2024, excluding prejudgment interest.

18. I reserve the right to modify and update the above methodology and calculations in the event that additional data becomes available. I also reserve the right to update the calculation of losses to extend beyond June 30, 2024 should Counsel or the Court request the same and to include a calculation of prejudgment interest.

#### **VI. LIMITING FACTORS AND OTHER ASSUMPTIONS**

19. My analyses and opinions are based on the information available as of the date of this Report. Should any additional data or information become available subsequent to the submission of this Report, I reserve the right to supplement or amend this Report based on this new information.

Dated: August 1, 2024



Adam Werner, PhD  
Managing Director, SEDA

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

**EDUCATION**

1998	Northwestern University, Kellogg Graduate School of Management Ph.D. in Finance
1992	Oberlin College B.A. in Economics with Honors

**TEACHING EXPERIENCE**

2014 – 2023	Cal Poly San Luis Obispo Orfalea College of Business San Luis Obispo, CA Lecturer in Economics
-------------	---

**BUSINESS EXPERIENCE**

2023 – Present	SEDA Experts
2015 – 2023	Crowninshield Financial Research
2018 – 2021	Pismo Beach Planning Commission
2009 – 2015	Gnarus Advisors/Berkeley Economic Consulting
2008 – 2009	LitiNomics
2004 – 2008	CRA International
2000 – 2003	National Economic Research Associates, Inc.
1998 – 2000	Cornerstone Research
1992 – 1993	Federal Reserve Bank of Cleveland

**PAPERS AND PUBLICATIONS**

“The Impact of Underwriter Reputation on Equity Offering: An Empirical Study.”  
Thesis, 1999.

“The Long-Run Performance of Underwriters and its Impact on Seasoned Equity  
Offerings.” 1999.

“Dynamic Measures of Underwriter Reputation: A Study of IPO’s.” 1999.

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

“CAFE Economics: A Note on the Limits and Effectiveness of Fuel Economy Regulation.” With Stephen Sheppard, 1992.

“Validation of Aggregate Damage Estimates in Securities Class Actions.” with Narinder Walia, Law360, 2021.

“Trading Models Underestimate Securities Class Damages.” with Narinder Walia, Law360, 2019.

“More ‘Dark Pools’ Deepen Litigation Issues.” Law360, 2013.

“Recent Trends in Securities Class Action Litigation: Will Enron and Sarbanes-Oxley Change the Tides.” with Elaine Buckberg, Todd Foster and Ronald Miller, 2003.

“The Effects of the PSLRA and Subsequent Events on Securities Litigation.” With Fred Dunbar and Todd Foster, prepared for the New York City Bar Association, 2003.

“The Energy Tax: Who Pays?” joint with Mark Schweitzer, in Federal Reserve Bank of Cleveland’s Economic Commentary, 1993.

**PRESENTATIONS**

“Cause or Effect: Are Settlement Statistics Driving Down Settlements?” Presentation to Robbins Geller Rudman & Dowd, LLP in San Diego, CA on October 10, 2013, Wolf Popper, LLP in New York, NY on September 18, 2013, Abraham, Fruchter & Twersky, LLP in New York, NY on September 17, 2013, Robbins Geller Rudman & Dowd, LLP in Melville, NY on September 11, 2013, Entwistle & Cappucci, LLP in New York, NY on September 10, 2013, and Faruqi & Faruqi, LLP in New York, NY on September 10, 2013.

“The Economics of Securities Litigation.” Sidley & Austin in Los Angeles, CA on March 14, 2007.

“The Global Cost of Capital.” Panel discussion on valuing assets in foreign countries at the University of Texas School of Law VALCON conference in Las Vegas on February 8, 2007.

“Economic Damages in Securities Fraud Matters.” NERA Luncheon Seminars with Alan Cox given at the Fifth Avenue Suites Hotel in Portland, OR on November 19, 2002 and at the W Hotel in Seattle, WA on November 20, 2002.

“Shareholder Class Actions: Calculation of Damages.” Presentation to Skadden, Arps, Slate, Meagher & Flom, LLP in San Francisco, CA on October 30, 2002, Marsh FINPRO in San Francisco, CA on September 18, 2002, Marsh Risk & Insurance Services in San

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

Diego, CA on September 17, 2002 and Marsh FINPRO in Los Angeles, CA on September 13, 2002.

“Capital Formation: Class Action Litigation and Prevention.” Speech and panel discussion focusing on securities class action litigation, which sometimes arise from initial public offerings and/or market volatility in the aftermarket. Presented at the 2002 CALBIO Summit in San Diego, CA on April 23, 2002.

“Shareholder Class Actions after the NASDAQ Bubble.” Speech given to the Securities Litigation Sub-Committee of the Colorado Bar Association at Holland & Hart, LLP in Denver, CO on April 17, 2002.

“Trends in Litigation: How Claims and Losses Are Valued.” Speech at the American Bankers Association Insurance Risk Management Annual Conference in San Diego, CA on February 4, 2002.

“Recent Trends in Securities Litigation.” “Basic Economic Analysis in Securities Class Action” and “Challenging the Efficient Market Assumption in Securities Class Action Matters.” presented to Cooley Godward in San Diego, CA on November 28, 2001. “Recent Trends in Securities Litigation.” presentation with Marcia Mayer given at Howard, Rice, Nemerovski, Canady, Falk & Rabkin in San Francisco, CA on November 27, 2001.

“Recent Trends in Securities Litigation.” presentation given to Marsh USA in Denver, CO on November 8, 2001, and Thelen, Reid & Priest in Los Angeles, CA on November 6, 2001.

“Financial Economics in Litigation.” speech presented to Simpson, Thacher & Bartlett in Palo Alto, CA on July 31, 2001, Baker & McKenzie in San Diego, CA on July 18, 2001, Brobeck, Phleger & Harrison in San Francisco, CA on June 25, 2001 and to Latham & Watkins in San Francisco, CA on June 26, 2001.

“Economic Analysis in Securities Fraud Cases.” Speech with Alan Cox delivered to Morrison & Forester, San Francisco, CA on July 25, 2001.

“Recent Trends: Shareholder Class Actions Five Years After the PSLRA.” speech presented to Shearman & Sterling in San Francisco, CA on May 23, 2001, O’Melveny & Myers in Los Angeles, CA on May 30, 2001, and Gray, Cary, Ware & Freidenrich in San Diego, CA on June 6, 2001.

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

**EXPERT REPORTS AND TESTIMONY**

*In re January 2021 Short Squeeze Trading Litigation.* Issued a declaration (2023), a reply declaration (2023), provided deposition testimony (2023) on market efficiency and damage methodology, and issued a declaration on *Cammer* factors 1-4 (2024) in a securities class action (U.S.D.C. Southern District of Florida).

*In Re Astec Industries, Inc. Securities Litigation.* Issued a declaration (2023), provided deposition testimony (2024), and issued a rebuttal declaration (2024) on market efficiency and damage methodology in a securities class action (U.S.D.C. Eastern District of Tennessee).

*Peter Trauernicht, et al. v. Genworth Financial Inc. Retirement Savings Plan.* Issued a report (2024), supplemental report (2024), and provided deposition testimony (2024) on damage methodology in an ERISA case (U.S.D.C. Eastern District of Virginia).

*In re Kandi Technologies Group, Inc. Securities Litigation.* Issued a declaration (2023) and provided deposition testimony (2024) on market efficiency and damage methodology in a securities class action (U.S.D.C. Southern District of New York).

*Christopher Arbour, et al. v. Tingo Group Inc., et al.* Issued a declaration on loss causation in a securities class action (U.S.D.C. District of New Jersey, 2023).

*Bo Shen, et al. v. Exela Technologies, Inc., et al.* Issued a declaration (2023) and provided deposition testimony (2023) on market efficiency and damage methodology in a securities class action (U.S.D.C. Northern District of Texas).

*In re XL Fleet Corp. Securities Litigation.* Issued a declaration on market efficiency and damage methodology in a securities class action (U.S.D.C. Southern District of New York, 2023).

*In re Nio, Inc. Securities Litigation.* Issued a declaration (2022), a reply declaration (2022) and provided deposition testimony (2022) on market efficiency and damage methodology in a securities class action (U.S.D.C. Eastern District of New York).

*Gelt Trading, LTD. v. Co-Diagnostics, Inc., et al.* Issued a declaration (2022) and a reply declaration (2022) on market efficiency and damage methodology in a securities class action (U.S.D.C. District of Utah, Central Division).

*6D Global Technologies, Inc. Securities Litigation.* Issued a declaration on loss causation and damages in a securities class action (U.S.D.C. Southern District of New York, 2022).

*In re Omega Healthcare Investors, Inc. Securities Litigation.* Issued a report (2022), a rebuttal report (2022) and provided deposition testimony (2022) on market efficiency and

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

damage methodology in a securities class action (U.S.D.C. Southern District of New York).

*Securities and Exchange Commission v. Bradley C. Davis*. Issued a report (2021), a rebuttal report (2021), provided deposition testimony (2021) and trial testimony (2022) on materiality in a case brought by the SEC (U.S.D.C. Central District of California).

*Andrew Trampe, et. al. v. CD Projekt S.A.* Issued a declaration on aggregate damages in a securities class action (U.S.D.C. Central District of California, 2022).

*In re Global Brokerage, Inc. f/k/a/ FXCM Inc.* Issued a report (2020), a rebuttal report (2020), provided deposition testimony (2020) and testified (2020) on market efficiency and damage methodology in a securities class action. Issued a report (2021), a rebuttal report (2021) and provided deposition testimony (2021) on loss causation and damages (U.S.D.C. Southern District of New York).

*George Barney, et al. v. Nova Lifestyle, Inc., et al.* Issued a report on market efficiency and damage methodology in a securities class action (U.S.D.C. Central District of California, 2021).

*Peter Voulgaris, et al. v. Array Biopharma Inc., et al.* Issued a report (2021) and provided deposition testimony (2021) on market efficiency and damage methodology in a securities class action (U.S.D.C. District of Colorado).

*In re Innocoll Holdings Public Limited Company Securities Litigation*. Issued a report (2020), a rebuttal report (2020) and provided deposition testimony (2020) on market efficiency and damage methodology in a securities class action (U.S.D.C. Eastern District of Pennsylvania).

*Michael Tietz, et al. v. Crytobloc Technologies Corp., et al.* Issued a report on price impact in a securities class action (Supreme Court of British Columbia, 2020).

*In re Horsehead Holding Corp. Securities Litigation*. Issued a report (2020) and provided deposition testimony (2020) on market efficiency and damage methodology in a securities class action (U.S.D.C. District of Delaware).

*Bing Li, et al. v. Aeterna Zentaris, Inc., et al.* Issued a declaration (2016), a report (2017), and provided deposition testimony (2017) on market efficiency and damage methodology in a securities class action. Issued a declaration (2019) a reply report (2019), and provided deposition testimony (2020) on loss causation and damages (U.S.D.C. District of New Jersey).

*In re Patriot National Inc. Securities Litigation*. Issued a declaration (2019) and a supplemental declaration (2019) on damages in a securities class action (U.S.D.C. Southern District of New York).

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

*Hamza Ramzan, et al. v. GDS Holdings Limited, et al.* Issued a declaration on NASDAQ microstructure in a securities class action (U.S.D.C. Eastern District of Texas, Marshall Division, 2019).

*Ivan Nibur, et al. v. SandRidge Mississippian Trust I, et al.* Issued a declaration (2018), a reply declaration (2018), a supplemental reply declaration (2018), and provided deposition testimony (2018) on market efficiency and damage methodology in a securities class action. Issued a declaration (2019) a rebuttal declaration (2019), and provided deposition testimony (2019) on loss causation and damages (U.S.D.C. Western District of Oklahoma).

*In Re Insys Therapeutics, Inc. Securities Litigation.* Issued a report on market efficiency and damage methodology in a securities class action (U.S.D.C. Southern District of New York, 2019).

*In Re Spectrum Pharmaceuticals, Inc. Securities Litigation.* Issued a declaration (2019) and provided deposition testimony (2019) on market efficiency and damage methodology in a securities class action (U.S.D.C. District of Nevada).

*Amanda Beezley et al. v. Fenix Parts, Inc., et al.* Issued a declaration on market efficiency and damage methodology in a securities class action (U.S.D.C. Northern District of Illinois, Eastern Division, 2019).

*Wayne Mucha, et al. v. Volkswagen Aktiengesellschaft, et al.* Issued a declaration regarding benefits to firms that have ADRs listed in a securities class action (U.S.D.C. Eastern District of New York, 2018).

*Michael Desta, et al. v. Wins Finance Holdings Inc., et al.* Issued a declaration (2018) and provided deposition testimony (2018) on market efficiency and damage methodology in a securities class action (U.S.D.C. Central District of California).

*Andrew Meyer, et al. v. Concordia International Corp., et al.* Issued a declaration (2018), a reply declaration (2018), and provided deposition testimony (2018) on market efficiency and damage methodology in a securities class action. Issued a declaration (2018), a reply declaration (2018), and provided deposition testimony (2018) on loss causation and damages (U.S.D.C. Southern District of New York).

*In re: K12 Securities Litigation.* Issued a declaration (2018) and provided deposition testimony (2018) on market efficiency and damage methodology in a securities class action (U.S.D.C. Northern District of California).

*Robert Colman, et al. v. Theranos, Inc., et al.* Issued a declaration on damage methodology and price impact in a securities class action (U.S.D.C. Northern District of California, San Jose Division, 2018).



**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

*In re: CytRx Corporation Securities Litigation.* Issued a declaration (2017) and provided deposition testimony (2018) regarding market efficiency and damage methodology in a securities class action (U.S.D.C. Central District of California).

*Lord Abbett Affiliated Fund, Inc., et al. v. American International Group, Inc.* Issued a report regarding market efficiency, loss causation, and damages in a securities case (U.S.D.C. Southern District of New York, 2017).

*Xiaolin Chi, et al. v. Qiao Xing Universal Resources, Inc., et al.* Issued a report on damages in a securities class action (District Court of the Virgin Islands, St. Croix Division, 2017).

*John Hosey v. Twitter, Inc., et al.* Issued a declaration (2017) and provided deposition testimony (2017) regarding rebuttal to Defendants' Motion for Summary Judgement in a securities class action (Superior Court of the State of California, County of San Mateo).

*Gwyn R. Hartman Revocable Living Trust v. Southern Michigan Bancorp, Inc. et al.* Issued a report on damages arising from alleged exclusions in a proxy solicitation (U.S.D.C. Western District of Michigan, 2017).

*Fred Kelsey, et al. v. Textura Corporation, et al.* Issued a declaration (2017) and provided deposition testimony (2017) on market efficiency and damage methodology in a securities class action (U.S.D.C. Northern District of Illinois).

*Dave Carlton, et al. v. Fred Cannon.* Issued a declaration on market efficiency and damage methodology in a securities class action (U.S.D.C. Southern District of Texas, Houston Division, 2016).

*James Middlemiss v. Penn West Petroleum LTD., et al.* Issued a report on damages in a securities class action (Superior Court of Justice Ontario, Canada, 2016).

*David Loritz, et al. v. Exide Technologies, et al.* Issued a report on damages and loss causation in a securities class action (U.S.D.C. Central District of California, 2015).

*Manishkumar Khunt, et al. v. Alibaba Group Holding Limited, et al.* Issued a declaration on potential investor damages in a securities class action (U.S.D.C. Southern District of New York, 2015).

*Biotechnology Value Fund, L.P. et al. v. Celera Corporation et al.* Issued a report (2014), a reply report (2014), a supplemental report (2014), and provided deposition testimony (2014) on damages arising from a merger (U.S.D.C. Northern District of California).

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

*In re: Hi-Crush Partners L.P. Securities Litigation.* Issued a declaration (2014), a supplemental declaration (2014), and provided deposition testimony (2014) regarding market efficiency and damage methodology in a securities class action (U.S.D.C. Southern District of New York).

*Ian Mausner v. MarketByte LLC, et al.* Issued a declaration about investment advisor incentives and liquidity needs in a securities class action (U.S.D.C. Southern District of California, 2014).

*Artes Medical, Inc. v. Lemperle et al.* Provided deposition testimony on behalf of defendants about alleged damages caused by a proxy contest (Superior Court of the State of California, County of San Diego, Central District, 2013).

*In re: Ebix Inc. Securities Litigation.* Issued a declaration (2012) and provided deposition testimony (2013) regarding market efficiency and damage methodology in a securities class action (U.S.D.C. Northern District of Georgia, Atlanta Division).

*Erik Poole and William Rhody v. Alange Energy Corp., et al.* Issued a report (2012) and a reply report (2013) on market efficiency and damages in a securities class action (Superior Court of Justice Ontario, Canada).

*In re: Hecla Mining Securities Litigation.* Issued a declaration on investor losses in a securities class action (U.S.D.C. District of Idaho, 2012).

*Mark Henning, et al. v. Orient Paper, Inc. et al.* Issued a declaration (2011), a supplemental declaration (2012) and provided deposition testimony (2012) regarding market efficiency and damage methodology in a securities class action (U.S.D.C. Central District of California).

*Carlos Munoz et al. v. China Expert Technology, Inc., et al.* Issued a declaration (2012), a supplemental declaration (2012) and provided deposition testimony (2012) in a securities class action regarding market efficiency and damage methodology (U.S.D.C. Southern District of New York).

*Theodore Dean, et al. v. China Agritech, Inc., et al.* Issued a declaration (2012), a supplemental declaration (2012) and provided deposition testimony (2012) in a case regarding market efficiency and damage methodology in a securities class action (U.S.D.C. Central District of California).

*Robert Michael Shenk, Derivatively on Behalf of Sirius XM Radio Inc. v. Melvin Alan Karmazin, et al.* Issued an expert report (2011), a supplemental expert report (2012) and provided deposition testimony (2012) in a case involving damages in a shareholder derivative matter (U.S.D.C. Southern District of New York).

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

*Pathway Investments Pty Ltd and Doystoy Pty Ltd v. National Australia Bank Ltd.*  
Submitted a report on survey techniques, the efficient market hypothesis and liquidity in a securities class action (Supreme Court of Victoria at Melbourne, Australia, Commercial and Equity Division, Commercial Court, 2012).

*Bruce Simmonds, Robert Grant and Gordon Moore v. Armtec Infrastructure Inc. et al.*  
Issued a report on market efficiency and damages in a securities class action (Superior Court of Justice Ontario, Canada, 2011).

*In re: BP plc. Securities Litigation.* Issued a declaration regarding damages and materiality in a securities class action (U.S.D.C. Southern District of Texas, Houston Division, 2010).

*In re: Tripath Technology Inc., Debtor.* Issued a report (2009) and provided deposition testimony (2010) regarding damages arising from Directors' and Officers' breach of fiduciary duty in bankruptcy court (U.S.D.C. Northern District of California, San Jose Division).

*David Ainslie and Muriel Marentette v. CV Technologies et al.* Issued a report estimating damages in a securities class action (Superior Court of Justice, Ontario, Canada, 2010).

*Harry Stackhouse, on Behalf of Himself and All Others Similarly Situated v. Toyota Motor Corporation, et al.* Issued a declaration regarding the relationship between Toyota's U.S. stock price and Japanese stock price in a securities class action (U.S.D.C. Central District of California, 2010).

*Phillip Elliot and William Kormos v. NovaGold Resources Inc., et al.* Issued a declaration in a securities class action regarding trading volume in the U.S. versus Canada. (Superior Court of Justice, Ontario, Canada, 2010).

*International Arbitration between a private equity firm and Chinese biotech company.*  
Issued a report (2008) and testified (2009) before an International Arbitration Committee regarding the value of a private equity investment.

*Arbitration between Albert Richards and Old Republic Title Insurance.* Deposed regarding estimated damages incurred by plaintiff as a result of a forced sale of Russian securities due to Old Republic's breach of contract (2008).

*Californians United for a Responsible Budget, et al., v. California State Public Works Board, et al.* Issued a report on the cost of issuing revenue bonds to fund California prison expansion (The Superior Court for the State of California, County of Sacramento, 2008).

**Exhibit-1**  
**Curriculum Vitae**  
**Adam Werner, Ph.D.**

*Arbitration between Daniel Lyons and Morgan Lyons, and Chinese Hospital Association and Sam English.* Deposed regarding plaintiffs' calculated damages arising from asbestos exposure for plaintiff (2003).

**Exhibit-2**

**Documents and Other Information Considered**

**CASE DOCUMENTS**

- Class Action Complaint, Case No. 4:22-cv-03290, filed September 26, 2022.

**DOCUMENTS RECEIVED FROM COUNSEL**

- [QUANTA\_100812-878]
- [QUANTA\_120726-793]
- [QUANTA\_00219-286]
- [QUANTA\_002290-358]
- [QUANTA\_002430-553]
- [QUANTA\_002559-672]
- [QUANTA\_002674-804]
- [QUANTA\_002810-943]
- [QUANTA\_002950-3071]
- [QUANTA\_003084-197]
- [QUANTA\_003367-478]
- [QUANTA\_003585-695]
- [QUANTA\_003725-819]
- [QUANTA\_003960-4057]
- [QUANTA\_004153-242]
- [QUANTA\_004420-509]
- [QUANTA\_004631-721]
- [QUANTA\_004827-860]
- [QUANTA\_005002-041]
- [QUANTA\_005134-173]
- [QUANTA\_005279-317]
- [QUANTA\_005409-447]
- [QUANTA\_005592-631]
- [QUANTA\_005743-005787]
- [QUANTA\_005960-6002]
- [QUANTA\_006125-6168]
- [QUANTA\_006297-337]
- [QUANTA\_006452-493]
- [QUANTA\_006606-648]
- [QUANTA\_129016-067]

**Exhibit-2**

**Documents and Other Information Considered**

- [QUANTA\_128821-871].

**DATA AND DATABASES**

- Morningstar Direct

**OTHER**

- Any other documents cited in my Report

**Exhibit 3. Fidelity Freedom TDFs - Quarterly Balances (in Dollars)**

4Q2016 through 2Q2024

Fidelity Freedom TDF Vintages															
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]
	Quarter Ended	Income	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
[1]	12/31/2016	\$3,319,477	\$21,907	\$18,712,519	\$474,056	\$62,070,825	\$3,533,411	\$49,087,985	\$1,600,924	\$43,711,411	\$1,954,919	\$22,671,868	\$1,013,311	\$438,862	-
[2]	3/31/2017	\$3,384,041	\$28,769	\$19,236,325	\$605,834	\$65,691,317	\$5,877,554	\$53,513,754	\$2,431,125	\$47,958,115	\$2,453,881	\$25,707,055	\$1,470,706	\$632,032	-
[3]	6/30/2017	\$3,737,305	\$33,735	\$19,007,270	\$771,573	\$68,920,640	\$6,628,295	\$57,945,597	\$3,054,033	\$51,896,890	\$3,177,402	\$28,552,792	\$2,211,182	\$947,583	-
[4]	9/30/2017	\$3,903,131	\$28,398	\$19,211,089	\$1,597,175	\$69,904,447	\$7,082,488	\$61,392,169	\$3,924,518	\$54,944,370	\$4,763,281	\$31,308,815	\$2,968,139	\$1,276,978	-
[5]	12/31/2017	\$4,006,501	\$242,293	\$17,740,221	\$1,783,916	\$71,251,182	\$7,827,203	\$65,332,451	\$5,691,993	\$59,076,823	\$5,867,139	\$34,587,591	\$3,802,193	\$1,672,400	-
[6]	3/31/2018	\$4,052,521	\$248,165	\$16,267,001	\$2,844,980	\$69,385,784	\$11,189,026	\$68,426,386	\$10,289,403	\$63,589,968	\$10,081,351	\$37,614,372	\$5,548,027	\$2,276,458	-
[7]	6/30/2018	\$3,855,974	\$242,706	\$15,636,238	\$2,814,719	\$69,884,271	\$12,329,130	\$70,185,439	\$11,157,224	\$65,500,318	\$11,200,495	\$39,127,488	\$6,702,439	\$2,916,385	-
[8]	9/30/2018	\$3,879,364	\$1,043,968	\$15,855,654	\$2,008,477	\$70,547,863	\$12,579,094	\$72,664,887	\$12,787,101	\$67,614,429	\$12,477,351	\$41,670,683	\$7,925,815	\$4,036,440	-
[9]	12/31/2018	\$3,896,960	\$1,346,323	\$15,016,424	\$2,072,688	\$63,849,999	\$13,646,884	\$66,799,606	\$12,531,774	\$60,435,749	\$11,836,471	\$37,979,092	\$8,524,208	\$4,578,672	-
[10]	3/31/2019	\$4,128,260	\$1,358,900	\$15,119,834	\$2,425,346	\$70,256,959	\$16,780,695	\$75,226,968	\$15,831,765	\$69,856,074	\$15,358,909	\$44,449,041	\$10,849,551	\$6,166,819	-
[11]	6/30/2019	\$3,985,228	\$1,769,194	\$14,966,009	\$2,685,655	\$72,241,619	\$20,030,909	\$78,835,737	\$18,109,265	\$73,287,585	\$17,356,058	\$48,236,754	\$12,904,538	\$7,851,689	-
[12]	9/30/2019	\$4,748,647	\$1,012,243	\$14,934,527	\$2,920,918	\$70,380,259	\$21,526,974	\$79,294,779	\$19,162,579	\$73,782,151	\$19,013,335	\$50,171,510	\$14,450,423	\$9,334,515	-
[13]	12/31/2019	\$4,965,736	\$1,064,042	\$15,196,690	\$3,334,471	\$75,053,404	\$24,190,798	\$86,189,131	\$27,613,840	\$82,943,977	\$22,799,709	\$57,463,343	\$17,813,688	\$11,910,955	\$68,589
[14]	3/31/2020	\$4,671,228	\$600,820	\$13,437,487	\$3,037,275	\$63,488,117	\$22,886,858	\$73,612,957	\$24,090,870	\$67,086,063	\$19,182,985	\$47,077,459	\$15,814,964	\$10,786,401	\$225,721
[15]	6/30/2020	\$5,266,385	\$608,418	\$14,231,760	\$3,154,444	\$71,229,622	\$26,233,690	\$84,850,217	\$27,877,679	\$80,612,166	\$23,518,778	\$56,327,030	\$19,400,287	\$14,080,689	\$720,047
[16]	9/30/2020	\$4,270,153	\$802,957	\$14,463,763	\$3,413,476	\$72,954,543	\$29,250,135	\$91,278,874	\$31,283,057	\$87,351,191	\$26,439,507	\$61,567,046	\$21,585,536	\$16,736,062	\$1,180,011
[17]	12/31/2020	\$4,384,794	\$927,803	\$14,000,479	\$3,684,712	\$76,350,682	\$35,407,589	\$104,637,344	\$36,872,598	\$102,610,188	\$32,577,559	\$73,612,463	\$27,111,699	\$21,197,991	\$1,738,424
[18]	3/31/2021	\$4,257,581	\$910,154	\$14,556,903	\$3,404,584	\$75,692,121	\$38,004,258	\$108,238,749	\$42,698,425	\$109,778,639	\$36,504,370	\$79,817,890	\$30,975,161	\$24,025,621	\$2,425,353
[19]	6/30/2021	\$4,106,116	\$815,189	\$14,618,763	\$3,564,771	\$77,702,047	\$41,771,045	\$116,567,957	\$47,780,033	\$118,751,055	\$40,874,887	\$88,872,038	\$35,765,711	\$27,955,903	\$3,230,550
[20]	9/30/2021	\$4,203,388	\$1,192,270	\$14,160,990	\$3,389,697	\$76,063,482	\$42,147,834	\$116,761,972	\$48,843,210	\$117,528,987	\$42,215,266	\$89,472,912	\$37,072,638	\$29,176,179	\$3,985,661
[21]	12/31/2021	\$4,166,690	\$1,743,823	\$14,392,863	\$3,494,377	\$76,090,298	\$42,866,406	\$118,300,868	\$51,875,564	\$126,965,949	\$45,751,052	\$97,095,500	\$41,262,179	\$31,969,676	\$5,035,700
[22]	3/31/2022	\$4,271,855	\$1,679,675	\$13,309,429	\$2,913,431	\$67,748,415	\$40,089,671	\$112,911,506	\$52,514,862	\$119,655,678	\$44,797,851	\$93,193,763	\$40,512,760	\$31,593,326	\$6,432,129
[23]	6/30/2022	\$4,008,603	\$1,758,244	\$11,626,474	\$2,691,435	\$58,428,369	\$36,399,036	\$100,048,785	\$47,502,862	\$103,745,303	\$40,483,177	\$80,798,072	\$37,100,196	\$29,166,261	\$6,972,920
[24]	9/30/2022	\$3,855,097	\$1,661,669	\$10,790,224	\$2,551,445	\$53,548,619	\$33,955,807	\$95,581,903	\$46,832,870	\$97,230,065	\$39,735,338	\$77,451,957	\$36,382,875	\$29,345,121	\$7,585,112
[25]	12/31/2022	\$3,952,103	\$1,760,774	\$11,201,382	\$2,622,017	\$54,789,685	\$38,010,175	\$105,095,780	\$54,022,533	\$111,171,257	\$48,389,127	\$89,325,730	\$44,436,481	\$36,756,285	\$10,772,181
[26]	3/31/2023	\$3,863,105	\$1,249,045	\$11,687,490	\$2,870,335	\$56,112,377	\$42,633,447	\$114,553,007	\$60,113,273	\$123,620,696	\$56,597,476	\$98,718,402	\$51,193,761	\$42,270,843	\$13,231,078
[27]	6/30/2023	\$4,061,140	\$1,496,071	\$11,663,108	\$3,034,874	\$55,132,772	\$42,435,563	\$118,079,502	\$64,788,100	\$133,172,241	\$62,143,543	\$106,122,467	\$56,763,344	\$47,384,593	\$16,307,031
[28]	9/30/2023	\$3,618,702	\$1,076,225	\$11,284,625	\$2,910,926	\$51,732,224	\$42,857,426	\$115,906,210	\$65,652,200	\$131,949,166	\$62,817,757	\$104,642,074	\$57,688,433	\$48,983,515	\$18,270,451
[29]	12/31/2023	\$3,770,099	\$1,166,324	\$11,711,718	\$3,034,188	\$55,064,202	\$46,822,339	\$128,884,345	\$74,825,544	\$146,556,789	\$72,877,596	\$118,430,214	\$68,108,078	\$57,541,333	\$23,533,497
[30]	3/31/2024	\$3,734,179	\$1,206,032	\$10,622,184	\$3,187,206	\$55,106,459	\$49,016,404	\$135,054,752	\$81,655,816	\$158,418,480	\$82,163,761	\$131,622,578	\$76,042,282	\$64,601,259	\$27,294,476
[31]	6/30/2024	\$3,734,179	\$1,206,032	\$10,622,184	\$3,187,206	\$55,106,459	\$49,016,404	\$135,054,752	\$81,655,816	\$158,418,480	\$82,163,761	\$131,622,578	\$76,042,282	\$64,601,259	\$27,294,476

**Notes:**

Quarterly Balance data up to 2Q2024 obtained from: [QUANTA\_100812-878]; [QUANTA\_120726-793]; [QUANTA\_00219-286]; [QUANTA\_002290-358]; [QUANTA\_002430-553]; [QUANTA\_002559-672]; [QUANTA\_002674-804]; [QUANTA\_002810-943]; [QUANTA\_002950-3071]; [QUANTA\_003084-197]; [QUANTA\_003367-478]; [QUANTA\_003585-695]; [QUANTA\_003725-819]; [QUANTA\_003960-4057]; [QUANTA\_004153-242]; [QUANTA\_004420-509]; [QUANTA\_004631-721]; [QUANTA\_004827-860]; [QUANTA\_005002-041]; [QUANTA\_005134-173]; [QUANTA\_005279-317]; [QUANTA\_005409-447]; [QUANTA\_005592-631]; [QUANTA\_005743-005787]; [QUANTA\_005960-6002]; [QUANTA\_006125-6168]; [QUANTA\_006297-337]; [QUANTA\_006452-493]; [QUANTA\_006606-648]; [QUANTA\_129016-067]; and [QUANTA\_128821-871]

Quarterly Balance data for 2Q2024 is assumed to remain unchanged from 1Q2024 balances.

**Exhibit 4. Fidelity Freedom TDFs - Quarterly Returns**

4Q2016 through 2Q2024

Fidelity Freedom TDF Vintages															
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]
	Quarter Ended	Income	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
[1]	12/31/2016	-0.79%	-0.47%	-0.25%	0.01%	0.20%	0.37%	0.79%	1.31%	1.31%	1.36%	1.29%	1.34%	1.31%	-
[2]	3/31/2017	2.57%	3.24%	3.80%	4.40%	4.73%	5.07%	5.91%	6.49%	6.54%	6.47%	6.49%	6.47%	6.53%	-
[3]	6/30/2017	1.84%	2.23%	2.64%	2.97%	3.18%	3.43%	3.98%	4.27%	4.31%	4.35%	4.35%	4.31%	4.22%	-
[4]	9/30/2017	1.97%	2.44%	2.86%	3.23%	3.45%	3.71%	4.33%	4.70%	4.80%	4.77%	4.75%	4.85%	4.75%	-
[5]	12/31/2017	1.64%	2.16%	2.70%	3.08%	3.45%	3.77%	4.38%	5.00%	5.16%	5.12%	5.10%	5.09%	5.11%	-
[6]	3/31/2018	-0.51%	-0.40%	-0.44%	-0.37%	-0.36%	-0.35%	-0.28%	-0.20%	-0.28%	-0.25%	-0.25%	-0.22%	-0.25%	-
[7]	6/30/2018	0.19%	0.31%	0.44%	0.56%	0.58%	0.68%	0.85%	1.07%	1.03%	1.06%	1.11%	1.05%	1.06%	-
[8]	9/30/2018	0.58%	0.89%	1.28%	1.61%	1.98%	2.20%	2.66%	3.21%	3.53%	3.45%	3.43%	3.48%	3.48%	-
[9]	12/31/2018	-2.00%	-3.24%	-4.74%	-6.06%	-7.20%	-8.14%	-9.84%	-11.91%	-12.65%	-12.65%	-12.62%	-12.65%	-12.61%	-
[10]	3/31/2019	4.33%	5.18%	6.23%	7.11%	7.92%	8.56%	9.71%	10.94%	11.50%	11.51%	11.43%	11.50%	11.39%	-
[11]	6/30/2019	2.56%	2.65%	2.77%	2.88%	2.98%	3.10%	3.22%	3.24%	3.15%	3.16%	3.22%	3.16%	3.21%	-
[12]	9/30/2019	1.09%	0.98%	0.84%	0.71%	0.51%	0.36%	0.23%	-0.14%	-0.40%	-0.44%	-0.44%	-0.46%	-0.43%	-0.40%
[13]	12/31/2019	2.37%	3.03%	3.92%	4.86%	5.77%	6.44%	7.37%	8.90%	9.54%	9.61%	9.57%	9.68%	9.58%	9.54%
[14]	3/31/2020	-4.73%	-6.19%	-8.27%	-10.42%	-12.35%	-13.85%	-15.90%	-19.11%	-20.70%	-20.72%	-20.66%	-20.71%	-20.68%	-20.74%
[15]	6/30/2020	6.41%	7.53%	9.21%	10.83%	12.41%	13.64%	15.41%	17.85%	19.11%	19.15%	19.12%	19.10%	19.10%	19.13%
[16]	9/30/2020	2.82%	3.24%	3.87%	4.60%	5.23%	5.71%	6.32%	7.39%	8.05%	7.98%	7.92%	7.95%	8.03%	7.94%
[17]	12/31/2020	4.57%	5.38%	6.86%	8.33%	9.72%	10.81%	12.17%	14.54%	15.97%	15.95%	16.05%	16.02%	15.95%	16.01%
[18]	3/31/2021	-0.34%	0.00%	0.74%	1.48%	2.22%	2.72%	3.32%	4.71%	5.70%	5.81%	5.76%	5.72%	5.76%	5.73%
[19]	6/30/2021	2.82%	3.02%	3.59%	4.10%	4.66%	5.04%	5.51%	6.31%	6.85%	6.86%	6.84%	6.86%	6.89%	6.92%
[20]	9/30/2021	-0.18%	-0.22%	-0.39%	-0.50%	-0.68%	-0.80%	-0.90%	-1.21%	-1.38%	-1.37%	-1.36%	-1.37%	-1.36%	-1.38%
[21]	12/31/2021	0.90%	1.09%	1.60%	2.12%	2.67%	3.01%	3.36%	4.21%	4.84%	4.85%	4.85%	4.84%	4.83%	4.82%
[22]	3/31/2022	-4.26%	-4.41%	-4.81%	-5.23%	-5.65%	-5.85%	-6.02%	-6.28%	-6.34%	-6.35%	-6.33%	-6.35%	-6.33%	-6.33%
[23]	6/30/2022	-6.06%	-6.47%	-7.95%	-9.42%	-10.90%	-11.68%	-12.21%	-13.67%	-14.97%	-15.09%	-15.08%	-15.08%	-15.09%	-15.08%
[24]	9/30/2022	-4.74%	-4.75%	-5.22%	-5.72%	-6.19%	-6.44%	-6.47%	-6.67%	-6.93%	-6.99%	-7.00%	-7.00%	-7.01%	-6.95%
[25]	12/31/2022	3.25%	3.35%	4.24%	5.12%	5.93%	6.57%	7.07%	8.26%	9.39%	9.60%	9.55%	9.59%	9.59%	9.54%
[26]	3/31/2023	3.61%	3.67%	4.18%	4.77%	5.34%	5.72%	5.93%	6.51%	7.07%	7.12%	7.19%	7.16%	7.19%	7.15%
[27]	6/30/2023	0.39%	0.47%	1.00%	1.52%	2.06%	2.54%	3.07%	3.96%	4.90%	5.12%	5.11%	5.12%	5.13%	5.14%
[28]	9/30/2023	-2.38%	-2.40%	-2.77%	-3.19%	-3.59%	-3.85%	-3.78%	-3.69%	-3.76%	-3.77%	-3.79%	-3.79%	-3.77%	-3.79%
[29]	12/31/2023	6.46%	6.49%	7.20%	8.02%	8.82%	9.44%	9.80%	10.36%	11.02%	11.19%	11.19%	11.21%	11.18%	11.22%
[30]	3/31/2024	1.24%	1.24%	1.91%	2.62%	3.37%	4.01%	4.63%	5.76%	7.11%	7.64%	7.64%	7.61%	7.62%	7.57%
[31]	6/30/2024	0.86%	0.00%	0.89%	1.02%	1.09%	1.17%	1.29%	1.48%	1.76%	1.88%	1.87%	1.91%	1.88%	1.90%

**Notes:**

Quarterly Return data up to 2Q2024 obtained from: [QUANTA\_100812-878]; [QUANTA\_120726-793]; [QUANTA\_00219-286]; [QUANTA\_002290-358]; [QUANTA\_002430-553]; [QUANTA\_002559-672]; [QUANTA\_002674-804]; [QUANTA\_002810-943]; [QUANTA\_002950-3071]; [QUANTA\_003084-197]; [QUANTA\_003367-478]; [QUANTA\_003585-695]; [QUANTA\_003725-819]; [QUANTA\_003960-4057]; [QUANTA\_004153-242]; [QUANTA\_004420-509]; [QUANTA\_004631-721]; [QUANTA\_004827-860]; [QUANTA\_005002-041]; [QUANTA\_005134-173]; [QUANTA\_005279-317]; [QUANTA\_005409-447]; [QUANTA\_005592-631]; [QUANTA\_005743-005787]; [QUANTA\_005960-6002]; [QUANTA\_006125-6168]; [QUANTA\_006297-337]; [QUANTA\_006452-493]; [QUANTA\_006606-648]; [QUANTA\_129016-067]; and [QUANTA\_128821-871]

Quarterly Return data for 2Q2024 obtained from Morningstar Direct.



**Exhibit 5. Fidelity Freedom TDFs - Quarterly Cash Flows**  
*4Q2016 through 2Q2024*

Fidelity Freedom TDF Vintages															
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]
	Quarter Ended	Income	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
[1]	12/31/2016	\$3,319,477	\$21,907	\$18,712,519	\$474,056	\$62,070,825	\$3,533,411	\$49,087,985	\$1,600,924	\$43,711,411	\$1,954,919	\$22,671,868	\$1,013,311	\$438,862	-
[2]	3/31/2017	(\$20,705)	\$6,153	(\$187,923)	\$110,901	\$685,911	\$2,164,930	\$1,522,721	\$726,380	\$1,387,345	\$372,402	\$1,564,273	\$391,883	\$164,530	-
[3]	6/30/2017	\$290,854	\$4,323	(\$736,226)	\$147,722	\$1,137,329	\$549,239	\$2,300,889	\$519,056	\$1,870,212	\$616,850	\$1,726,520	\$677,146	\$288,872	-
[4]	9/30/2017	\$92,244	(\$6,160)	(\$340,282)	\$800,655	(\$1,393,597)	\$208,343	\$937,515	\$726,892	\$556,433	\$1,434,172	\$1,399,954	\$649,769	\$284,391	-
[5]	12/31/2017	\$39,255	\$213,283	(\$1,988,866)	\$137,474	(\$1,066,810)	\$477,796	\$1,251,032	\$1,571,302	\$1,299,350	\$860,096	\$1,682,725	\$683,061	\$330,204	-
[6]	3/31/2018	\$66,475	\$6,838	(\$1,395,799)	\$1,067,740	(\$1,607,091)	\$3,389,039	\$3,275,115	\$4,608,637	\$4,678,933	\$4,228,747	\$3,112,043	\$1,754,148	\$608,164	-
[7]	6/30/2018	(\$204,363)	(\$6,240)	(\$702,370)	(\$46,055)	\$95,635	\$1,064,376	\$1,178,120	\$757,599	\$1,256,687	\$1,011,949	\$1,096,293	\$1,096,372	\$615,784	-
[8]	9/30/2018	\$965	\$799,093	\$19,720	(\$851,571)	(\$718,544)	(\$21,102)	\$611,544	\$1,271,412	(\$198,401)	\$890,632	\$1,201,868	\$990,205	\$1,018,574	-
[9]	12/31/2018	\$95,042	\$336,218	(\$88,288)	\$185,914	(\$1,621,474)	\$2,091,410	\$1,286,971	\$1,267,415	\$1,374,895	\$937,666	\$1,567,467	\$1,600,848	\$1,051,071	-
[10]	3/31/2019	\$62,410	(\$57,181)	(\$832,517)	\$205,360	\$1,351,259	\$1,965,303	\$1,943,622	\$1,929,027	\$2,467,546	\$2,159,800	\$2,127,379	\$1,345,131	\$1,066,856	-
[11]	6/30/2019	(\$248,741)	\$374,301	(\$572,828)	\$190,347	(\$109,753)	\$2,729,309	\$1,185,380	\$1,764,827	\$1,231,647	\$1,511,191	\$2,355,500	\$1,712,435	\$1,486,695	-
[12]	9/30/2019	\$719,980	(\$774,211)	(\$157,329)	\$216,246	(\$2,226,212)	\$1,423,645	\$274,951	\$1,078,660	\$788,598	\$1,734,005	\$2,146,511	\$1,605,536	\$1,516,380	-
[13]	12/31/2019	\$104,402	\$21,097	(\$323,148)	\$271,615	\$611,300	\$1,277,812	\$1,049,012	\$6,745,917	\$2,121,220	\$1,958,431	\$2,489,093	\$1,964,320	\$1,681,815	\$68,589
[14]	3/31/2020	(\$59,731)	(\$397,308)	(\$501,747)	\$50,253	(\$2,299,428)	\$2,045,554	\$1,126,928	\$1,754,259	\$1,311,018	\$1,106,346	\$1,486,707	\$1,690,424	\$1,338,129	\$171,360
[15]	6/30/2020	\$295,602	(\$37,648)	(\$443,051)	(\$211,745)	(\$134,489)	\$225,445	(\$102,973)	(\$513,646)	\$703,632	\$661,640	\$248,785	\$564,640	\$1,234,075	\$451,140
[16]	9/30/2020	(\$1,144,902)	\$174,801	(\$319,326)	\$113,795	(\$2,002,203)	\$1,517,378	\$1,068,627	\$1,345,550	\$250,119	\$1,044,344	\$778,465	\$642,391	\$1,524,987	\$402,817
[17]	12/31/2020	(\$80,299)	\$81,684	(\$1,455,614)	(\$13,022)	(\$3,695,214)	\$2,996,555	\$2,248,490	\$1,039,476	\$1,306,728	\$1,920,162	\$2,164,519	\$2,068,347	\$1,793,080	\$369,462
[18]	3/31/2021	(\$112,091)	(\$17,649)	\$453,290	(\$334,838)	(\$2,351,289)	\$1,632,262	\$124,365	\$4,088,024	\$1,317,482	\$2,034,738	\$1,964,829	\$2,312,731	\$1,607,275	\$587,390
[19]	6/30/2021	(\$271,472)	(\$122,422)	(\$461,411)	\$20,629	(\$1,519,832)	\$1,850,629	\$2,368,027	\$2,388,311	\$1,452,741	\$1,867,412	\$3,596,007	\$2,664,311	\$2,275,648	\$637,314
[20]	9/30/2021	\$104,613	\$378,850	(\$401,407)	(\$157,119)	(\$1,114,034)	\$711,007	\$1,248,066	\$1,640,987	\$415,636	\$1,901,359	\$1,805,459	\$1,796,507	\$1,601,024	\$799,607
[21]	12/31/2021	(\$74,338)	\$538,594	\$5,793	\$32,923	(\$2,006,654)	(\$551,596)	(\$2,383,763)	\$976,931	\$3,751,590	\$1,487,728	\$3,285,543	\$2,395,285	\$1,383,498	\$857,991
[22]	3/31/2022	\$282,681	\$12,731	(\$391,205)	(\$398,271)	(\$4,043,789)	(\$268,696)	\$1,731,437	\$3,895,799	\$745,246	\$1,951,403	\$2,248,456	\$1,869,752	\$1,648,055	\$1,715,145
[23]	6/30/2022	(\$4,510)	\$187,210	(\$624,328)	\$52,309	(\$1,936,793)	\$993,785	\$925,811	\$2,166,919	\$2,005,685	\$2,445,307	\$1,657,551	\$2,695,907	\$2,340,113	\$1,510,644
[24]	9/30/2022	\$36,376	(\$13,049)	(\$229,649)	\$14,007	(\$1,260,586)	(\$98,405)	\$2,005,195	\$2,498,310	\$670,394	\$2,082,507	\$2,311,590	\$1,879,561	\$2,222,362	\$1,096,909
[25]	12/31/2022	(\$28,125)	\$43,506	(\$46,684)	(\$60,125)	(\$1,935,325)	\$1,824,224	\$2,754,119	\$3,319,212	\$4,814,030	\$4,838,279	\$4,479,318	\$4,563,908	\$4,597,240	\$2,463,377
[26]	3/31/2023	(\$231,746)	(\$576,266)	\$17,845	\$123,331	(\$1,600,598)	\$2,450,727	\$3,230,129	\$2,573,283	\$4,589,806	\$4,761,179	\$2,972,106	\$3,575,298	\$2,872,687	\$1,688,829
[27]	6/30/2023	\$183,073	\$241,137	(\$141,639)	\$121,005	(\$2,133,390)	(\$1,280,284)	\$7,325	\$2,292,611	\$3,493,650	\$2,647,271	\$2,356,525	\$2,948,894	\$2,944,754	\$2,396,136
[28]	9/30/2023	(\$345,809)	(\$383,870)	(\$55,354)	(\$27,218)	(\$1,422,768)	\$2,056,239	\$2,291,463	\$3,254,921	\$3,785,373	\$3,018,278	\$2,539,357	\$3,077,441	\$3,386,066	\$2,581,911
[29]	12/31/2023	(\$82,220)	\$20,248	(\$385,876)	(\$110,331)	(\$1,229,535)	(\$81,745)	\$1,617,948	\$2,373,105	\$61,052	\$3,031,634	\$2,079,374	\$3,955,371	\$3,080,706	\$3,212,995
[30]	3/31/2024	(\$82,579)	\$25,228	(\$1,312,716)	\$73,551	(\$1,814,679)	\$317,096	\$200,970	\$2,519,460	\$1,436,032	\$3,719,327	\$4,143,516	\$2,751,535	\$2,674,933	\$1,980,327
[31]	6/30/2024	(\$31,953)	-	(\$94,091)	(\$32,538)	(\$599,229)	(\$575,000)	(\$1,739,209)	(\$1,207,855)	(\$2,794,670)	(\$1,541,759)	(\$2,461,117)	(\$1,448,716)	(\$1,213,608)	(\$518,903)

**Notes:**

Row 1 The estimation of implied cash flows begins with the quarterly balances for 4Q2016.

Rows 2 to 31 Quarterly cash flows are calculated as: [current quarterly balance] - [previous quarterly balance] x [1 + current quarterly return].

**Exhibit 6. American Funds TDFs - Quarterly Returns**  
*4Q2016 through 2Q2024*

American Funds TDF Vintages															
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]
	Quarter Ended	Income	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
[1]	12/31/2016	-0.03%	-0.03%	-0.03%	0.01%	-0.07%	0.10%	0.32%	0.47%	0.58%	0.67%	0.71%	0.64%	0.67%	0.67%
[2]	3/31/2017	3.24%	3.24%	3.24%	3.44%	4.01%	4.66%	5.58%	6.26%	6.46%	6.63%	6.62%	6.64%	6.59%	6.59%
[3]	6/30/2017	2.00%	2.00%	2.00%	2.07%	2.43%	2.78%	3.32%	3.80%	3.95%	3.97%	3.99%	4.03%	4.00%	4.00%
[4]	9/30/2017	2.61%	2.61%	2.61%	2.82%	3.03%	3.64%	4.24%	4.81%	5.00%	5.07%	5.12%	5.13%	5.07%	5.07%
[5]	12/31/2017	2.18%	2.18%	2.18%	2.43%	2.83%	3.44%	4.12%	4.69%	4.97%	5.11%	5.20%	5.15%	5.17%	5.17%
[6]	3/31/2018	-1.01%	-1.01%	-1.01%	-0.95%	-0.63%	-0.30%	0.00%	0.34%	0.39%	0.45%	0.53%	0.53%	0.56%	0.56%
[7]	6/30/2018	0.55%	0.55%	0.55%	0.70%	0.96%	1.12%	1.38%	1.67%	1.83%	1.86%	1.90%	1.94%	1.92%	1.92%
[8]	9/30/2018	1.65%	1.65%	1.65%	1.81%	1.98%	2.21%	2.59%	3.03%	3.14%	3.28%	3.35%	3.30%	3.30%	3.30%
[9]	12/31/2018	-3.64%	-3.64%	-3.64%	-4.21%	-4.88%	-6.32%	-7.86%	-9.75%	-10.40%	-10.66%	-10.84%	-10.88%	-10.88%	-10.88%
[10]	3/31/2019	5.96%	5.96%	5.96%	6.49%	6.82%	7.86%	9.01%	10.66%	11.18%	11.29%	11.46%	11.50%	11.43%	11.43%
[11]	6/30/2019	2.68%	2.68%	2.68%	2.70%	2.79%	2.97%	3.12%	3.16%	3.22%	3.30%	3.30%	3.26%	3.34%	3.34%
[12]	9/30/2019	0.81%	0.81%	0.81%	0.85%	0.70%	0.43%	0.27%	0.00%	-0.13%	-0.19%	-0.26%	-0.20%	-0.23%	-0.23%
[13]	12/31/2019	3.83%	3.83%	3.83%	4.22%	4.54%	5.65%	6.51%	8.00%	8.53%	8.66%	8.88%	8.87%	8.82%	8.82%
[14]	3/31/2020	-7.75%	-7.75%	-7.75%	-8.67%	-8.85%	-10.26%	-12.56%	-15.67%	-17.03%	-17.31%	-17.62%	-17.59%	-17.53%	-17.53%
[15]	6/30/2020	8.31%	8.31%	8.31%	9.03%	9.79%	12.07%	13.83%	17.15%	18.44%	18.82%	19.23%	19.21%	19.13%	19.33%
[16]	9/30/2020	3.21%	3.21%	3.21%	3.47%	3.77%	4.50%	5.42%	6.33%	6.94%	7.06%	7.19%	7.11%	7.09%	7.11%
[17]	12/31/2020	5.95%	5.95%	5.95%	6.72%	6.88%	8.16%	9.74%	11.89%	13.01%	13.33%	13.43%	13.46%	13.53%	13.47%
[18]	3/31/2021	2.12%	2.12%	2.12%	2.40%	2.39%	2.39%	2.91%	3.57%	3.97%	4.08%	4.20%	4.18%	4.11%	4.18%
[19]	6/30/2021	3.33%	3.33%	3.33%	3.67%	3.89%	4.30%	4.90%	5.82%	6.39%	6.54%	6.58%	6.69%	6.74%	6.77%
[20]	9/30/2021	-0.24%	-0.24%	-0.24%	-0.23%	-0.27%	-0.18%	-0.27%	-0.36%	-0.48%	-0.52%	-0.43%	-0.46%	-0.40%	-0.43%
[21]	12/31/2021	3.86%	3.86%	3.86%	4.11%	4.29%	4.54%	5.12%	5.80%	6.13%	6.22%	6.05%	5.99%	5.89%	5.93%
[22]	3/31/2022	-3.23%	-3.23%	-3.23%	-3.59%	-3.91%	-4.76%	-5.48%	-6.27%	-6.85%	-7.12%	-7.49%	-7.82%	-7.89%	-7.94%
[23]	6/30/2022	-6.85%	-6.85%	-6.85%	-7.76%	-8.36%	-9.42%	-10.83%	-12.56%	-13.83%	-14.33%	-14.76%	-15.10%	-15.18%	-15.20%
[24]	9/30/2022	-5.20%	-5.20%	-5.20%	-5.41%	-5.47%	-5.59%	-5.64%	-5.60%	-5.59%	-5.59%	-5.53%	-5.48%	-5.44%	-5.39%
[25]	12/31/2022	6.33%	6.33%	6.33%	6.69%	6.90%	7.14%	7.52%	8.26%	8.82%	8.92%	8.88%	8.82%	8.74%	8.80%
[26]	3/31/2023	2.59%	2.59%	2.59%	2.83%	3.11%	3.70%	4.52%	5.08%	5.68%	5.89%	6.15%	6.36%	6.38%	6.37%
[27]	6/30/2023	0.81%	0.81%	0.81%	1.20%	1.51%	2.14%	3.08%	4.10%	5.14%	5.50%	5.68%	5.93%	5.99%	5.98%
[28]	9/30/2023	-2.41%	-2.41%	-2.41%	-2.55%	-2.74%	-3.00%	-3.18%	-3.29%	-3.49%	-3.57%	-3.58%	-3.64%	-3.62%	-3.61%
[29]	12/31/2023	7.68%	7.68%	7.68%	8.04%	8.51%	8.96%	9.78%	10.50%	11.27%	11.54%	11.72%	11.83%	11.90%	11.86%
[30]	3/31/2024	2.82%	2.82%	2.82%	3.02%	3.38%	3.82%	4.81%	6.01%	7.21%	7.50%	7.68%	7.86%	7.87%	7.85%
[31]	6/30/2024	0.86%	0.86%	0.86%	0.90%	0.97%	0.99%	1.18%	1.39%	1.66%	1.71%	1.73%	1.80%	1.79%	1.85%

**Note:**

All data obtained from Morningstar Direct.

**Exhibit 7. Replacement Balances**

4Q2016 through 2Q2024

Replacement Fund Vintages															
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]
	Quarter Ended	Income	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
[1]	12/31/2016	\$3,319,477	\$21,907	\$18,712,519	\$474,056	\$62,070,825	\$3,533,411	\$49,087,985	\$1,600,924	\$43,711,411	\$1,954,919	\$22,671,868	\$1,013,311	\$438,862	-
[2]	3/31/2017	\$3,406,377	\$28,770	\$19,131,188	\$601,258	\$65,243,894	\$5,863,096	\$53,350,864	\$2,427,520	\$47,924,341	\$2,456,846	\$25,736,878	\$1,472,449	\$632,310	-
[3]	6/30/2017	\$3,765,294	\$33,668	\$18,777,221	\$761,405	\$67,965,870	\$6,575,587	\$57,424,744	\$3,038,898	\$51,687,686	\$3,171,330	\$28,490,593	\$2,208,947	\$946,474	-
[4]	9/30/2017	\$3,955,886	\$28,387	\$18,927,388	\$1,583,508	\$68,628,482	\$7,023,135	\$60,796,931	\$3,912,058	\$54,826,681	\$4,766,383	\$31,348,488	\$2,971,996	\$1,278,850	-
[5]	12/31/2017	\$4,081,342	\$242,289	\$17,350,965	\$1,759,471	\$69,506,777	\$7,742,482	\$64,551,679	\$5,666,952	\$58,851,159	\$5,869,974	\$34,660,764	\$3,808,058	\$1,675,132	-
[6]	3/31/2018	\$4,106,742	\$246,689	\$15,780,546	\$2,810,541	\$67,458,374	\$11,108,563	\$67,826,790	\$10,294,631	\$63,761,635	\$10,125,248	\$37,955,713	\$5,582,312	\$2,292,737	-
[7]	6/30/2018	\$3,925,153	\$241,817	\$15,165,684	\$2,784,038	\$68,200,574	\$12,296,827	\$69,943,693	\$11,224,610	\$66,184,442	\$11,325,908	\$39,774,259	\$6,787,164	\$2,952,576	-
[8]	9/30/2018	\$3,991,056	\$1,044,911	\$15,436,307	\$1,982,955	\$68,830,936	\$12,546,978	\$72,369,470	\$12,836,162	\$68,066,249	\$12,588,115	\$42,307,910	\$8,001,160	\$4,068,564	-
[9]	12/31/2018	\$3,940,807	\$1,343,090	\$14,786,075	\$2,085,407	\$63,852,093	\$13,845,359	\$67,971,791	\$12,851,922	\$62,363,137	\$12,184,071	\$39,288,801	\$8,731,812	\$4,677,032	-
[10]	3/31/2019	\$4,238,202	\$1,365,996	\$14,835,231	\$2,426,058	\$69,558,144	\$16,898,751	\$76,038,539	\$16,150,416	\$71,805,507	\$15,720,058	\$45,919,525	\$11,080,718	\$6,278,288	-
[11]	6/30/2019	\$4,102,845	\$1,776,841	\$14,659,287	\$2,681,861	\$71,391,358	\$20,130,626	\$79,600,123	\$18,426,401	\$75,350,419	\$17,749,493	\$49,788,523	\$13,154,544	\$7,974,591	-
[12]	9/30/2019	\$4,856,002	\$1,016,997	\$14,620,496	\$2,920,835	\$69,664,003	\$21,641,480	\$80,089,488	\$19,505,062	\$76,043,028	\$19,450,176	\$51,807,945	\$14,733,276	\$9,472,569	-
[13]	12/31/2019	\$5,146,326	\$1,077,033	\$14,857,127	\$3,315,699	\$73,434,780	\$24,142,483	\$86,353,095	\$27,811,650	\$84,652,344	\$23,092,800	\$58,898,061	\$18,004,032	\$11,989,947	\$68,589
[14]	3/31/2020	\$4,687,549	\$596,212	\$13,203,357	\$3,078,479	\$64,639,197	\$23,710,571	\$76,636,208	\$25,208,810	\$71,551,132	\$20,201,779	\$50,008,012	\$16,528,138	\$11,225,658	\$227,922
[15]	6/30/2020	\$5,372,648	\$608,104	\$13,857,398	\$3,144,791	\$70,832,258	\$26,796,990	\$87,135,541	\$29,019,371	\$85,451,974	\$24,665,066	\$59,870,859	\$20,267,123	\$14,606,988	\$723,119
[16]	9/30/2020	\$4,400,284	\$802,434	\$13,983,091	\$3,367,577	\$71,497,838	\$29,521,273	\$92,923,530	\$32,201,825	\$91,634,025	\$27,450,650	\$64,952,541	\$22,350,687	\$17,168,319	\$1,177,331
[17]	12/31/2020	\$4,581,696	\$931,843	\$13,359,133	\$3,580,985	\$72,721,627	\$34,926,453	\$104,226,673	\$37,070,809	\$104,859,822	\$33,030,171	\$75,843,342	\$27,427,871	\$21,284,128	\$1,705,366
[18]	3/31/2021	\$4,566,840	\$933,970	\$14,095,936	\$3,332,022	\$72,109,327	\$37,394,599	\$107,380,169	\$42,482,787	\$110,335,738	\$36,413,782	\$80,993,505	\$30,887,774	\$23,765,357	\$2,364,008
[19]	6/30/2021	\$4,447,216	\$842,603	\$14,103,218	\$3,474,902	\$73,396,299	\$40,851,567	\$115,008,893	\$47,343,156	\$118,840,873	\$40,662,376	\$89,920,206	\$35,618,785	\$27,641,707	\$3,161,409
[20]	9/30/2021	\$4,541,095	\$1,219,418	\$13,667,773	\$3,309,933	\$72,082,275	\$41,488,343	\$115,940,994	\$48,815,404	\$118,680,727	\$42,352,551	\$91,338,267	\$37,252,833	\$29,132,732	\$3,947,389
[21]	12/31/2021	\$4,641,853	\$1,805,031	\$14,200,569	\$3,478,841	\$73,166,998	\$42,819,584	\$119,487,938	\$52,621,719	\$129,711,690	\$46,475,602	\$100,148,476	\$41,880,249	\$32,231,304	\$5,039,583
[22]	3/31/2022	\$4,774,434	\$1,759,394	\$13,350,171	\$2,955,756	\$66,261,924	\$40,511,862	\$114,666,594	\$53,218,607	\$121,567,428	\$45,116,653	\$94,894,111	\$40,473,923	\$31,337,628	\$6,354,430
[23]	6/30/2022	\$4,442,853	\$1,826,077	\$11,811,294	\$2,778,719	\$58,787,254	\$37,691,217	\$103,168,493	\$48,700,640	\$106,755,231	\$41,097,216	\$82,543,710	\$37,059,937	\$28,920,968	\$6,899,430
[24]	9/30/2022	\$4,248,121	\$1,718,040	\$10,967,247	\$2,642,460	\$54,309,917	\$35,485,345	\$99,350,766	\$48,473,168	\$101,455,548	\$40,880,411	\$80,288,834	\$36,909,304	\$29,569,966	\$7,624,388
[25]	12/31/2022	\$4,488,697	\$1,870,215	\$11,614,259	\$2,759,246	\$56,123,839	\$39,843,428	\$109,571,825	\$55,794,845	\$115,216,399	\$49,364,253	\$91,898,070	\$44,729,375	\$36,752,396	\$10,758,537
[26]	3/31/2023	\$4,373,002	\$1,342,301	\$11,932,381	\$2,960,715	\$56,268,500	\$43,766,568	\$117,758,602	\$61,204,552	\$126,355,032	\$57,030,989	\$100,523,670	\$51,149,259	\$41,968,084	\$13,132,150
[27]	6/30/2023	\$4,591,501	\$1,594,312	\$11,887,404	\$3,117,390	\$54,983,602	\$43,422,135	\$121,395,202	\$66,008,307	\$136,345,658	\$62,815,457	\$108,587,038	\$57,132,435	\$47,427,999	\$16,314,131
[28]	9/30/2023	\$4,135,004	\$1,172,008	\$11,545,480	\$3,010,647	\$52,056,200	\$44,175,408	\$119,825,498	\$67,088,840	\$135,379,248	\$63,592,791	\$107,237,424	\$58,127,719	\$49,099,046	\$18,307,845
[29]	12/31/2023	\$4,370,286	\$1,282,247	\$12,046,112	\$3,142,490	\$55,256,291	\$48,053,978	\$133,159,942	\$76,506,432	\$150,691,874	\$73,961,087	\$121,879,847	\$68,958,721	\$58,024,967	\$23,691,678
[30]	3/31/2024	\$4,411,139	\$1,343,691	\$11,073,621	\$3,310,949	\$55,307,522	\$50,207,950	\$139,764,406	\$83,620,607	\$162,995,886	\$83,226,534	\$135,383,723	\$77,133,644	\$65,263,657	\$27,531,971
[31]	6/30/2024	\$4,417,050	\$1,355,225	\$11,074,583	\$3,308,070	\$55,242,068	\$50,128,095	\$139,669,491	\$83,574,776	\$162,901,441	\$83,105,709	\$135,269,530	\$77,075,818	\$65,220,868	\$27,522,310

**Note:**

Row 1 Equal to the Fidelity Freedom TDF balances as of 4Q2016.

Rows 2 to 31 Replacement balances are calculated as: [Previous Quarter's Replacement Balance] x [1 + Current Quarter's Replacement Return (Exhibit-6)] + [Current Quarter's Cash Flow (Exhibit 5)].

**Exhibit 8. Cumulative Quarterly Losses and (Gains) Assuming Replacement of Fidelity Freedom TDFs with American Funds TDFs**

4Q2016 through 2Q2024

Vintages <sup>[1]</sup>															
	[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]	[l]	[m]	[n]	[o]
	Quarter Ended	Income	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
[1]	12/31/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-
[2]	3/31/2017	\$22,336	\$01	(\$105,137)	(\$4,576)	(\$447,423)	(\$14,458)	(\$162,890)	(\$3,605)	(\$33,774)	\$2,965	\$29,823	\$1,743	\$278	-
[3]	6/30/2017	\$27,989	(\$67)	(\$230,049)	(\$10,168)	(\$954,770)	(\$52,708)	(\$520,853)	(\$15,135)	(\$209,204)	(\$6,072)	(\$62,199)	(\$2,235)	(\$1,109)	-
[4]	9/30/2017	\$52,755	(\$11)	(\$283,701)	(\$13,667)	(\$1,275,965)	(\$59,353)	(\$595,238)	(\$12,460)	(\$117,689)	\$3,102	\$39,673	\$3,857	\$1,872	-
[5]	12/31/2017	\$74,841	(\$04)	(\$389,256)	(\$24,445)	(\$1,744,405)	(\$84,721)	(\$780,772)	(\$25,041)	(\$225,664)	\$2,835	\$73,173	\$5,865	\$2,732	-
[6]	3/31/2018	\$54,221	(\$1,476)	(\$486,455)	(\$34,439)	(\$1,927,410)	(\$80,463)	(\$599,596)	\$5,228	\$171,667	\$43,897	\$341,341	\$34,285	\$16,279	-
[7]	6/30/2018	\$69,179	(\$889)	(\$470,554)	(\$30,681)	(\$1,683,697)	(\$32,303)	(\$241,746)	\$67,386	\$684,124	\$125,413	\$646,771	\$84,725	\$36,191	-
[8]	9/30/2018	\$111,692	\$943	(\$419,347)	(\$25,522)	(\$1,716,927)	(\$32,116)	(\$295,417)	\$49,061	\$451,820	\$110,764	\$637,227	\$75,345	\$32,124	-
[9]	12/31/2018	\$43,847	(\$3,233)	(\$230,349)	\$12,719	\$2,094	\$198,475	\$1,172,185	\$320,148	\$1,927,388	\$347,600	\$1,309,709	\$207,604	\$98,360	-
[10]	3/31/2019	\$109,942	\$7,096	(\$284,603)	\$712	(\$698,815)	\$118,056	\$811,571	\$318,651	\$1,949,433	\$361,149	\$1,470,484	\$231,167	\$111,469	-
[11]	6/30/2019	\$117,617	\$7,647	(\$306,722)	(\$3,794)	(\$850,261)	\$99,717	\$764,386	\$317,136	\$2,062,834	\$393,435	\$1,551,769	\$250,006	\$122,902	-
[12]	9/30/2019	\$107,355	\$4,754	(\$314,031)	(\$83)	(\$716,256)	\$114,506	\$794,709	\$342,483	\$2,260,877	\$436,841	\$1,636,435	\$282,853	\$138,054	-
[13]	12/31/2019	\$180,590	\$12,991	(\$339,563)	(\$18,772)	(\$1,618,624)	(\$48,315)	\$163,964	\$197,810	\$1,708,367	\$293,091	\$1,434,718	\$190,344	\$78,992	-
[14]	3/31/2020	\$16,321	(\$4,608)	(\$234,130)	\$41,204	\$1,151,080	\$823,713	\$3,023,251	\$1,117,940	\$4,465,069	\$1,018,794	\$2,930,553	\$713,174	\$439,257	\$2,201
[15]	6/30/2020	\$106,263	(\$314)	(\$374,362)	(\$9,653)	(\$397,364)	\$563,300	\$2,285,324	\$1,141,692	\$4,839,808	\$1,146,288	\$3,543,829	\$866,836	\$526,299	\$3,072
[16]	9/30/2020	\$130,131	(\$523)	(\$480,672)	(\$45,899)	(\$1,456,705)	\$271,138	\$1,644,656	\$918,768	\$4,282,834	\$1,011,143	\$3,385,495	\$765,151	\$432,257	(\$2,680)
[17]	12/31/2020	\$196,902	\$4,040	(\$641,346)	(\$103,727)	(\$3,629,055)	(\$481,136)	(\$410,671)	\$198,211	\$2,249,634	\$452,612	\$2,230,879	\$316,172	\$86,137	(\$33,058)
[18]	3/31/2021	\$309,259	\$23,816	(\$460,967)	(\$72,562)	(\$3,582,794)	(\$609,659)	(\$858,580)	(\$215,638)	\$557,099	(\$90,588)	\$1,175,615	(\$87,387)	(\$260,264)	(\$61,345)
[19]	6/30/2021	\$341,100	\$27,414	(\$515,545)	(\$89,869)	(\$4,305,748)	(\$919,478)	(\$1,559,064)	(\$436,877)	\$89,818	(\$212,511)	\$1,048,168	(\$146,926)	(\$314,196)	(\$69,141)
[20]	9/30/2021	\$337,707	\$27,148	(\$493,217)	(\$79,764)	(\$3,981,207)	(\$659,491)	(\$820,978)	(\$27,806)	\$1,151,740	\$137,285	\$1,865,355	\$180,195	(\$43,447)	(\$38,272)
[21]	12/31/2021	\$475,163	\$61,208	(\$192,294)	(\$15,536)	(\$2,923,300)	(\$46,822)	\$1,187,070	\$746,155	\$2,745,741	\$724,550	\$3,052,976	\$618,070	\$261,628	\$3,883
[22]	3/31/2022	\$502,579	\$79,719	\$40,742	\$42,325	(\$1,486,491)	\$422,191	\$1,755,088	\$703,745	\$1,911,750	\$318,802	\$1,700,348	(\$38,837)	(\$255,698)	(\$77,699)
[23]	6/30/2022	\$434,250	\$67,833	\$184,820	\$87,284	\$358,885	\$1,292,181	\$3,119,708	\$1,197,778	\$3,009,928	\$614,039	\$1,745,638	(\$40,259)	(\$245,293)	(\$73,490)
[24]	9/30/2022	\$393,024	\$56,371	\$177,023	\$91,015	\$761,298	\$1,529,538	\$3,768,863	\$1,640,298	\$4,225,483	\$1,145,073	\$2,836,877	\$526,429	\$224,845	\$39,276
[25]	12/31/2022	\$536,594	\$109,441	\$412,877	\$137,229	\$1,334,154	\$1,833,253	\$4,476,045	\$1,772,312	\$4,045,142	\$975,126	\$2,572,340	\$292,894	(\$3,889)	(\$13,644)
[26]	3/31/2023	\$509,897	\$93,256	\$244,891	\$90,380	\$156,123	\$1,133,121	\$3,205,595	\$1,091,279	\$2,734,336	\$433,513	\$1,805,268	(\$44,502)	(\$302,759)	(\$98,928)
[27]	6/30/2023	\$530,361	\$98,241	\$224,296	\$82,516	(\$149,170)	\$986,572	\$3,315,700	\$1,220,207	\$3,173,417	\$671,914	\$2,464,571	\$369,091	\$43,406	\$7,100
[28]	9/30/2023	\$516,302	\$95,783	\$260,855	\$99,721	\$323,976	\$1,317,982	\$3,919,288	\$1,436,640	\$3,430,082	\$775,034	\$2,595,350	\$439,286	\$115,531	\$37,394
[29]	12/31/2023	\$600,187	\$115,923	\$334,394	\$108,302	\$192,089	\$1,231,639	\$4,275,597	\$1,680,888	\$4,135,085	\$1,083,491	\$3,449,633	\$850,643	\$483,634	\$158,181
[30]	3/31/2024	\$676,960	\$137,659	\$451,437	\$123,743	\$201,063	\$1,191,546	\$4,709,654	\$1,964,791	\$4,577,406	\$1,062,773	\$3,761,145	\$1,091,362	\$662,398	\$237,495
[31]	6/30/2024	\$682,871	\$149,193	\$452,399	\$120,864	\$135,609	\$1,111,691	\$4,614,739	\$1,918,960	\$4,482,961	\$941,948	\$3,646,952	\$1,033,536	\$619,609	\$227,834
Total Losses to Plan Participants as of June 30, 2024:															\$20,139,166

**Notes:**<sup>III</sup> Quarterly Gains and Losses are calculated as the difference between the replacement quarterly balance presented in Exhibit-7 and the original quarterly balance presented in Exhibit-3.